

WELDABLE FBG STRAIN SENSOR ARRANGEMENT

Abstract

The invention relates to an FBG strain sensor arrangement (1) comprising a sensor carrier (4) of steel sheet and at least one FBG strain sensor (2) fastened on it, wherein the FBG strain sensor (2) has an optical fibre with two end portions, between which at least one Bragg grating is provided. Coupled on at each of the end portions is an optical signal line (3a, 3b) for passing on the measurement signal. Also provided is a protective covering (5), which has the following features: along the optical fibre, the protective covering (5) is formed as thin and narrow and is adhesively bonded to the sensor carrier (4), and so the optical fibre is fixed on the sensor carrier (4). On each of the two end portions of the optical fibre, the protective covering (5) is enlarged, and so a cavity is formed under it. The edges of the protective covering (5) are adhesively bonded to the sensor carrier (4). Arranged in the cavity, under the enlarged protective covering (5), is an elastic filler (6), which embeds the coupling location in a vibration-damping manner.

Figure 1